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they only eat pumpkin leaves', i.e. where game is short and the people have to rely on vegetable relishes. They refer to a visit to a village on a big river as, 'He has gone to eat fish with So-and-So.' The fortunes of each district are discussed year by year and villages described as 'with hunger' (*pa nsala*) or the converse, 'with beer' (*pa bwalua*), i.e. with so much grain that they can make beer frequently. The seasonal changes in food, and the stages in its production, give their names to the periods of the year. While a definite calendar of moons exists (cf. Chap. XVIII) the Bemba more often time events as having taken place 'in the hunger months', i.e. the last months of the rains when the millet supply is low; or 'when we were eating mushrooms', 'when the *mupundu* fruit was ripe', and 'when we were reaping, sowing', &c., and the ages of babies are usually reckoned by dating their births in this manner.

The position of the Bemba traveller, dependent as he is on the hazards of hospitality, provides a further element of uncertainty. The correct greeting to one who has returned from a journey is *Mwalyeni bwino*, 'Have you eaten well?' To which the courteous reply is *Kulila mulelya*, 'Provided you have eaten well yourself', or *E Mukwai kufipwishya*, 'Yes, sir, I eat everything up completely', or else *Fia kwa cilime bafipwa kano wa kulapo yanda*, 'It would have been impossible to finish up all the crops unless you had built a house alongside', i.e. it was so plentiful. There is a regular form of magic used to ensure a guest's arrival before a meal has been finished and not after. A knot tied in the grass with the right formula repeated will secure this result, and I found my staff even performed this rite on my own behalf if at all doubtful as to my reception on a visit to unknown English hosts.

Besides this direct interest in the food he is going to eat in the day, or the beer he may have the luck to come in time for, the secondary values acquired by food give it an added emotional interest to the Bemba. It must be remembered that there is no other way of accumulating wealth in this area except by acquiring sufficient food to feed many followers. The giving or receipt of food is a part of most economic transactions, and may come to represent a number of human relationships whether between different kinsmen or between subject and chief. For this reason the whole question of handling or dividing food acquires tremendous emotional significance for the native, and discussions of personalities or legal relationships tend to be ultimately expressed in this

CALENDAR OF SEASONAL ACTIVITIES

LABOUR AND TIME

Bemba months	English equivalents	Weather	Food-supply	MEN			WOMEN		
				Millet	Subsidiary	Other activities	Gardening		Other activities
Kabengele kanono	January	Heavy rain	Hunger month	..	Mound-digging and sowing	*Fishing.* Traps and nets set on flooded banks	..	Mound digging and sowing	Collecting mushrooms and caterpillars.
Kabengele kakalamba	February	"	Hunger month. Cucurbits ripe	Fencing garden	" "	Build houses (new village)	..	" "	" "
Kutumpu	March	Rain slackening	Subsidiary crops ripe	..	" "	" "	Harvest (maize)	..	Collecting caterpillars.
Shinde	April	Rains cease	Early millet ripe	..	..	Fish weirs set	Harvest (millet—early)	..	..
Kapepo kanono	May	Cold weather	Ample food-supply	Tree-cutting	..	" "	Harvest (millet—main crop)	Harvest (groundnuts)	..
Kapepo kakalamba	June	" "	" "	" "	..	..	" "	" "	..
Cikungulu pepo	July	" "	" "	" "	..	..	Piling branches		
Lipukutu kanono	August	Hot weather	" "	" "	Dry weather sowing	Fish-poisoning. Net-hunting begins	" "	" "	..
Lipukutu kakalamba	September	" "	" "	" "	" "	Fish-poisoning. Net-hunting	" "	Dry weather sowing	Collecting wild spinaches. Fish-poisoning.
Luuba kanono	October	" "	Less food	Firing gardens	..	" "	Firing gardens	" "	" "
Luuba kakalamba	November	Early rains	Getting scarce	" "	Mound digging and sowing	Fish-spearing and trapping on flats	..	..	Fish-poisoning.
Mupundu	December	Mid-rains	Hunger month	Sowing main crop	" "	..	Sowing main crop	Mound digging and sowing	Fruits.
Cisshi kubili	No English equivalent. The 13th month	" "	" "	" "	" "	" "	" "	" "	Collecting mushrooms.

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221 i.e. before the hot weather, but otherwise a man should be able to finish his tree-cutting work by July or August and then to have a month or two more or less free. It must be noted, however, that the demand for European work on roads, &c., coincides with the tree-cutting months, since such labour has to be postponed till the cold, dry weather.[1]

The coming of the rains in October and November brings a complete change of programme. The softening of the ground means the beginning of the planting season, and the re-hoeing of village beds and the making of *mputa* on the *ififwani* should go on till February or March. There is fishing in the big rivers at the beginning of the rains, but not universally. At the end of the period (March) the gardens have to be fenced. Thus, apart from the tree-cutting season these months, November to March, should be the heaviest of the year. Whereas a garden has got to be cut if the staple crop is to be sown at all, the amount of hoeing done depends on individual energy and initiative, and since the hoeing months coincide with the season of scarcity, it is this work which tends to be skimped.

The women's work is more continuous throughout the seasons. During the cold weather months they have not only branches to pile but the harvest to get in. In the hot weather there is less garden work, but this is the season of brewing and the time when the women have the greatest difficulty in hunting for relish. In the wet weather their work is very similar to that of the men, since they also hoe and sow. In February and March the women have less garden work, but take time in going to and fro in their *ififwani* to collect the ripening pumpkins, then reap the early-maturing *mwangwe*, dry and beat it, and collect food from relatives &c. In general, these villages which rely chiefly on mound cultivation[2] are at their busiest at this time of year, while in the ordinary community it is not a heavy season.

The Rhythm of Work.

805 The Bemba, like many other primitive peoples, reckon the passage of time by the activities performed in it, rather than by

[1] In the early years of the copper mines (1930–1) the figures for voluntary labour rose to a peak during the rainy months, and fell during the times of the tree-cutting season.

[2] Cf. the description of cultivation in a typical village (Chap. XV).

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any regular system of time intervals. The *umwaka* (plur. *imyaka*) is the name given to the complete cycle of climatic changes and economic processes which make up the year.[1] This is divided into thirteen months (*umueshi—imieshi*) which signifies moon, or the cycle of the moon (cf. table on p. 389). The names of these months are used with greater or less frequency according to the importance of the activities performed in them. The coming of each new moon is an important event in the people's life, since it affects very largely the tempo of ordinary activities. When the moon is full, laughter and talk go on late into the night and the drums sound for dancing. When the moon has waned, there is no other system of lighting and the people go early to bed. The days of full moon are also believed to be specially lucky and to be auspicious for the starting of any new activity. I noticed several times that the *bakabilo* of Citimukulu's court postponed important ritual acts, often at some practical inconvenience, until the nights were 'white, completely white' (*ukubuta tutu*), explaining in answer to my comment: 'We cannot work at such things in the dark' (*Teti tubombefyo mu mfifi*). The rhythm of the changing moons has thus a significance to the Bemba that it has lost in our society, and the appearance of the new crescent is greeted with delight and often with shouts from the children, but at the same time the calendar of months is rarely used as a method of calculating time or fixing the start of economic activities. Some months coincide with the change of season: *Shinde* (April), the change to the cold weather; *Lusuba lunono* (October), the beginning of the hot season; *Mpundu* (November), the coming of the rains and the time of the ripening of the *mpundu* fruit. In these cases the name of the month is used in daily conversation in planning activities. But in other cases the change of climate, i.e. windy season (*mpepo*) or the hot season (*ulusuba*) is referred to only, and there are several months in the year when, owing to the difficulties of working with a thirteen-months calendar, the ordinary native is not quite certain what the name of the particular moon should be.[2] The English child hardly notices changes in the moon, but learns to recite the months of the year

[1] The *umwaka* is a cycle of seasonal changes but it is never calculated by means of the stars, in which the Bemba seem to have little interest and never use as a means of reckoning time.

[2] In April 1934 I heard the chief's council discuss informally with the Paramount chief whether the moon that had just appeared was correctly *Kutumpu* or *Shinde*, and these learned men of the tribe took different sides on the question.

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805 872 as an abstract sequence of names of which certain have an emotional significance as being a period containing a birthday or Christmas, but the Bemba child is delighted with the appearance of each new crescent and lives a more exciting life during the full moon. He only gradually learns at about 9 or 10 that certain of these moons coincide with particular economic tasks, and later still, as an adult, he is able to recite all the moons in order and to discourse wisely on the whole sequence of the calendar.

805 177 Before the coming of the white man, the Bemba had apparently no smaller subdivision of the month than the day. They have now completely adopted the English week, even in remote spots of the country where no one is working for a European. Every native keeps the Christian Sunday, known as the 'day of God', *nshiku ya Mulungu*, from which term the week itself is known as *Mulungu*, the word for God, and the days called the first, second, third, fourth, &c. (*pali cimo*, *pali cibili*, &c.). The conception of the week has been incorporated in Bemba economic life since it coincides with an adoption of the European rhythm of work and system of payment, and the acceptance for the first time of a time interval which is also a period of work. Wage-earners calculate their weeks of service, and chiefs who formerly called up tribute labourers when they were required now state their dues in precise terms, as for instance three days a week.

805 The Bemba word for night is *ubushiku*, and for day *akasuba*. In any one day the time is divided into three. Dawn is a fixed event (*bwaca*), and the period from dawn till midday is known as *ulucelo*. Midday, from 11 till about 3 o'clock, is called *akasuba*, the ordinary word for sun, and the period from 3 to 6, i.e. the time of sunset, is known as *icungulo*. Thus a man who wants to make an appointment with a friend does so to the nearest two or three hours, by telling him to come in the morning, at midday, or in the evening, and when acting as a witness at a legal court can place events in this manner, usually giving additional precision to his statement by raising his arm to point to the exact position of the sun in the sky at the time referred to, e.g. at 11 or 3, and adding, 'The sun was like this' (*kasubefi*).

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805 513 It is hardly ever necessary to fix time in the night, but the natives speak of 'the middle of the night' (*pakati ka bushiku*) and will also reckon time by the number of turns they have made in their sleep, since these people apparently wake more or less regu-

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larly four or five times a night in order to shift their positions on their hard wood beds.

Thus it can be said that the Bemba method of reckoning time allows them to fix dates to the nearest year, season, month, or nowadays week, but it does not subdivide day and night into equal intervals, and in fact most of their activities do not need to be co-ordinated more closely than to the nearest day or half day. The conception of the equal time interval does not seem to occur to them in the ordinary course of life. Their days and nights are not in fact of equal length as ours are, with our independence of seasonal changes in light, dark, and temperature, and our regular routine of work. Bemba rise at 5 a.m. in the hot weather, but come reluctantly from their huts at 8 or even later in the cold season, and their working day is fixed accordingly. Meals are timed to the nearest two hours rather than to the minute, and night begins at any time from 8 o'clock on a chilly dark evening to midnight or later when the moon is full, and the people are tempted to stay out in the open. Nor does the work-time interval which dominates our activities and calculations exist for them. We, after all, can hardly conceive of time except in terms of energy expenditure and, to many of us, a fixed money value as well. But the Bemba in his unspecialized society does different tasks daily and a different amount of work each day. The diary of men's and women's activities given in Table E shows that in Kampamba the men were employed on five quite separate occupations (hoeing, hunting, chasing locusts, fencing, carrying, &c.) in the course of ten days, and at Kasaka, though the main work was branch lopping, yet various ritual observances, visits from friends or Europeans, interrupted the daily routine constantly. Domestic needs tie the women to certain daily tasks in this, as in other communities, but even then their garden work varies greatly from day to day. The working hours also change in what seems to us a most erratic manner. In fact I do not think the people ever conceive of such periods as the month, week, or day in relation to regular work at all. The major agricultural tasks have to coincide with certain seasons and moons, and that is all. A man says he has to cut trees between such-and-such climatic changes, but not that he has so many hours of work to get through, and daily work, which has become from habit almost a physiological necessity to many Europeans, only occurs at certain times of the year. The whole bodily rhythm

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805 512 461 of the Bemba differs completely from that of a peasant in Western Europe, let alone an industrial worker. For instance at Kasaka, in a slack season, the old men worked 14 days out of 20 and the young men 7; while at Kampamba in a busier season, the men of all ages worked on an average 8 out of 9 working days. The average working day in the first instance was 2¾ hours for men and 2 hours gardening plus 4 hours domestic work for the women, but the figures varied from 0 to 6 hours a day. In the second case the average was 4 hours for the men and 6 for the women, and the figures showed the same daily variation.

805 All these observations as to the African's conception and use of time are important in studying the relationship of black and white. There is probably no aspect of life in which the habits of both differ so fundamentally, and in both cases these habits are rooted in childhood training and a particular economic system. The Bemba have a 'sense of time' contrary to the usual European view, and it is fitted to guide them in the organization of their own activities, but it is ill-adapted to new routines and new economic values. A study of village life, therefore, explains many of the reactions of the Bemba to regular European work, particularly that on the mines. It surely also accounts for their desertions in the early days of employment, the utter exhaustion sometimes seen in new recruits at the end of a day's work, and the sudden desire of even the fully acclimatized native to return to his village and 'rest'—perhaps also the complete inactivity of many of such men returned to their villages on holiday. From the point of view of food production, too, it may account for the apparent inability of most natives to plan their work to obtain the maximum results, to calculate the labour required for any particular job, and lastly, to answer coherently the questions of an inquiring European as to 'how long' it takes to make a garden or build a fence.

Time taken on Particular Tasks.

461 512 I have sometimes been asked to estimate the time a Bemba man should spend each year in order to complete his necessary garden work. If this question could be answered precisely, the information would be extremely useful to those dealing with administrative problems such as the recruiting of native labour, the control of labour emigration, the optimum length of time natives should be encouraged to serve at the mines inside or outside the territory,